

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Paul W. Dent
Serial No.: 09/764,712
Filed: January 18, 2001
For: CODE-REUSE PARTITIONING SYSTEMS AND METHODS FOR CELLULAR
COMMUNICATIONS

Group Art Unit: 2616
Examiner: Toan D. Nguyen
Confirmation No.: 7572

October 20, 2006

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Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF ON APPEAL UNDER 37 C.F.R. §41.37

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed electronically on August 21, 2006.

It is not believed that an extension of time and/or additional fee(s) are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. Sec. 1.136(a). Any additional fees believed to be due may be charged to Deposit Account No. 50-0220.

Real Party In Interest

The real party in interest is assignee Ericsson Inc., Plano TX.

Related Appeals and Interferences

Appellant is aware of no appeals or interferences that would be affected by the present appeal.

Status of Claims

Claims 20, 21, 30-32 and 34-42 are pending in this application. Claims 20, 21, 30-32, 34-37, and 39-42 stand finally rejected the final Office Action mailed June 1, 2006 (herein after "Final Action"), which rejections were confirmed in the Advisory Action mailed August 7, 2006 (hereinafter "Advisory Action"). Claims 32, 34, 35 and 39-42 stand rejected under

35 U.S.C. § 102(e) as anticipated by U.S. Patent No. 5,732,072 to Ketseoglou et al. (hereinafter "Ketseoglou"). *See* Final Action, p. 2. Claims 20, 21, 30, 31, 36 and 37 stand rejected under 35 U.S.C. § 103 as obvious over U.S. Patent No. 6,195,343 to Wantanabe (hereinafter "Wantanabe") in view of Ketseoglou. *See* Final Action, p. 5. Claim 38 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the recitations of the base claim and any intervening claims. *See* Final Action, p. 8.

Status of Amendments

Appellant's Amendments of January 18, 2001, March 23, 2001, September 19, 2005, and March 14, 2006 have been entered. The Advisory Action fails to indicate the disposition of Appellant's Amendment of July 26, 2006, which was limited to typographical corrections required by the Final Action. *See* Final Action, p. 2. The attached Appendix A presents the pending claims as amended by Appellant's Amendment of July 26, 2006.

Summary of Claimed Subject Matter

According to independent Claim 20, a plurality of code division multiple access cellular radiotelephone base stations (*e.g.*, FIG. 7, base stations 710a, 710b, 710n) communicate with radiotelephones using a common plurality of spreading codes (*e.g.*, FIG. 7, codes c_1-c_n), wherein each base station uses the common plurality of spreading codes. *See*, *e.g.*, FIG. 7; page 19, lines 9-16. Cellular radiotelephone frequencies are allocated among the plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes. *See*, *e.g.*, FIGs. 8A, 8B; page 19, lines 16-35.

According to independent Claim 32, frequencies are allocated for use in a plurality of cells (*e.g.*, FIG. 8A, cells 1-21) such that respective different frequency allocations are provided for respective first and second spreading codes (*e.g.*, FIG. 8B, codes c_1, c_2) used in each of the cells. Allocating frequencies for use in the plurality of cells comprises applying a first frequency reuse pattern for the first spreading code and applying a second frequency reuse pattern for the second spreading code. *See*, *e.g.*, FIG. 8B; page 19, lines 16-35.

According to independent Claim 36, a cellular radiotelephone system includes a plurality of CDMA cellular radiotelephone base stations (e.g., FIG. 7, base stations 710a, 710b, 710n) that communicate with cellular radiotelephones on a plurality of frequencies, the base stations each using a common plurality of spreading codes (e.g., FIG. 7, codes c₁-c_n). *See, e.g.*, FIG. 7; page 19, lines 9-16. The frequencies that are allocated among said plurality of base stations are used such that frequencies are allocated for a first one of said spreading codes according to a first frequency allocation system and are allocated for a second one of said spreading codes according to a second frequency allocation system different from said first frequency allocation system. *See, e.g.*, FIGs. 8A, 8B; page 19, lines 16-35.

According to independent Claim 39, a CDMA wireless communications system includes a plurality of cells (e.g., FIG. 8A, cells 1-21) and a code reuse partitioning circuit (e.g., FIG. 7, circuit 740) operative to allocate frequencies for use in the plurality of cells such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells. *See, e.g.*, FIGs. 8A, 8B; page 19, lines 16-35.

Grounds of Rejection To Be Reviewed on Appeal

Claims 32, 34, 35 and 39-42, including independent Claims 32 and 39, stand rejected under 35 U.S.C. § 102(e) as anticipated by Ketseoglou.

Claims 20, 21, 30, 31, 36 and 37, including independent Claims 20 and 36, stand rejected under 35 U.S.C. § 103 as obvious over Wantanabe in view of Ketseoglou.

Arguments

I. Introduction

Some of the pending claims are rejected as anticipated under 35 U.S.C. § 102(e). Under 35 U.S.C. § 102, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." M.P.E.P. § 2131 (quoting *Verdegaal Bros. v. Union Oil Co.*, 814 F.2d 628, 631, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987)). "Anticipation under 35 U.S.C. § 102 requires the disclosure in a single piece of prior art of each and every limitation of a claimed invention." *Apple Computer Inc. v. Articulate Sys. Inc.*, 57 U.S.P.Q.2d 1057, 1061 (Fed. Cir. 2000). A finding

of anticipation further requires that there must be no difference between the claimed invention and the disclosure of the cited reference as viewed by one of ordinary skill in the art. *See Scripps Clinic & Research Foundation v. Genentech Inc.*, 18 U.S.P.Q.2d 1001 (Fed. Cir. 1991). In particular, the Court of Appeals for the Federal Circuit held that a finding of anticipation requires absolute identity for each and every element set forth in the claimed invention. *See Trintec Indus. Inc. v. Top-U.S.A. Corp.*, 63 U.S.P.Q.2d 1597 (Fed. Cir. 2002). Additionally, the cited prior art reference must be enabling, thereby placing the allegedly disclosed matter in the possession of the public. *In re Brown*, 329 F.2d 1006, 1011, 141 U.S.P.Q. 245, 249 (C.C.P.A. 1964). Thus, the prior art reference must adequately describe the claimed invention so that a person of ordinary skill in the art could make and use the invention.

Further ones of the pending claims are rejected as obvious under 35 U.S.C. § 103. To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. §2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. §2143.01, citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be clear and particular, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembicza*k, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). The Court of Appeals for the Federal Circuit has further stated that, to support combining or modifying references, there must be particular evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

II. Claims 32, 34, 35 and 39-42 are patentable over Ketseoglou

Independent Claim 32 recites:

A method of operating a code division multiple access (CDMA) wireless communications system that includes a plurality of cells, the method comprising:
allocating frequencies for use in the plurality of cells such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells, wherein the step of allocating frequencies for use in the plurality of cells comprises:
applying a first frequency reuse pattern for the first spreading code; and
applying a second frequency reuse pattern for the second spreading code.

The Final Action cites FIG. 5 and accompanying description thereof in column 8 of Ketseoglou as allegedly teaching the recitations of independent Claim 32. *See* Final Action, pp. 2 and 3. In the "Response to Arguments" section, the Final Action further states:

Ketseoglou (sic) patent at col. 3 lines 17-22 where Ketseoglou (sic) clearly teaches "The system may comprise a number of "stacked" base stations in a single cell, each operating over a different frequency or using different spreading codes. The ultimate potential user capacity is therefore a function of the number of available frequencies, time slots and codes for a given cell.

Final Action, pp. 8 and 9. In response, Appellant noted that there is nothing in Ketseoglou that specifically explains how this "stacked base station" concept relates to the frequency reuse scheme shown in the cited FIG. 5 of Ketseoglou. Moreover, the description of these "stacked base stations" at column 3 does not say anything about different frequency **allocations** for multiple spreading codes used in each of the cells. *See* Appellant's Amendment of July 26, 2006. In response to these arguments, the Advisory Action asserts:

Ketseoglou (sic) discloses at col. 3 lines 17-22, The (sic) system may comprise a number of "stack" base stations in a signle (sic) cell, each operating over a frequency or using different spreading codes." (sic) Then at col. 8, lines 2-14 (see figure 5), Ketseoglou (sic) clearly teaches further "Associated with each cell 103 is a assigned frequency and an assigned spread spectrum code." (different frequency allocation for different spreading codes, and that different frequency allocation are used for respective codes means.

Advisory Action, continuation sheet.

At column 8, lines 2-14, Ketseoglou states:

... Associated with each cell 103 is an assigned frequency and an assigned spread spectrum code. Preferably, three different frequencies (or frequency groups) F1, F2 and F3 are assigned in such a manner that no two adjacent cells have the same

assigned frequency (or frequency group) F1, F2 or F3, thereby minimizing interference between adjacent cells.

To further reduce the possibility of intercell interference, different near-orthogonal spread spectrum codes C1 through C7 are assigned as shown in a repeating pattern overlapping the frequency reuse pattern. Although seven spread spectrum codes C1 through C7 are shown in FIG. 5, a pattern involving other numbers of spread spectrum codes may be suitable depending upon the particular application.

In contrast, independent Claim 32 recites "respective *first* and *second* spreading codes used in *each* of the cells." FIG. 5 of Ketseoglou and the above-quoted description thereof from column 8 describe using a single code in a respective cell, and does not teach or suggest use of first and second codes in *each* of a plurality of cells as recited in independent Claim 32. Thus, there appears to be nothing in this portion of Ketseoglou that suggests providing more than one code in a cell. Moreover, even if one were to assert that the "stacked" base station concept cited in the Final Action suggests providing more than one spreading code in a cell (Appellant submits that the Final Action and Advisory Action provide no basis for such an assertion), this still would not provide any teaching as to how frequencies would be allocated for the respective spreading codes, *i.e.*, this combination would still not teach or suggest "applying a first frequency reuse pattern for the first spreading code" and "applying a second frequency reuse pattern for the second spreading code" as recited in independent Claim 32.

Therefore, Appellant respectfully submits that Ketseoglou does not provide the teachings alleged in the Final Action and the Advisory Action. Accordingly, Appellant submits that Ketseoglou does not disclose or suggest all of the recitations of Claim 32 and that, for at least these reasons, independent Claim 32 patentable. Appellant submits that independent Claim 39 is patentable over Ketseoglou for at least similar reasons, and that dependent Claims 34, 35 and 40-42 are patentable at least by virtue of the patentability of the respective ones of independent Claim 32 and 39 from which they depend. Appellant, therefore, requests reversal of the rejections of Claims 32, 34, 35 and 39-42.

III. Claims 20, 21, 30, 31, 36 and 37 are patentable over Wantanabe in view of Ketseoglou

Independent Claim 20 recites:

A method of operating a plurality of code division multiple access cellular radiotelephone base stations, the method comprising the steps of:

communicating between the plurality of base stations and radiotelephones using a common plurality of spreading codes, wherein each base station uses the common plurality of spreading codes; and

allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes.

In the rejection of independent Claim 20, the Final Action concedes that Wantanabe "does not expressly disclose wherein each base station uses the common plurality of spreading codes, and allocating cellular radiotelephone frequencies among said plurality of base stations" in the manner recited in independent Claim 20. Final Action, p. 5. The Final Action relies on Ketseoglou for these missing teachings, stating:

Ketseoglou et al. disclose wherein each base station uses the common plurality of spreading codes (col. 3 lines 17-22 and col. 8 lines 2-14), and allocating cellular radiotelephone frequencies (figure 5, references F1, F2, and F3) among said plurality of base stations (figure 5, reference 103) (col. 7 line 66 to col. 8 line 5) according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes (col. 8 lines 2-3).

Final Action, p. 5.

Along lines discussed above, col. 3 lines 17-22 and col. 8, lines 2-14 of Ketseoglou do not disclose "wherein each base station uses the common plurality of spreading codes."

Moreover, along lines discussed above, FIG. 5 of Ketseoglou and the description thereof do not describe using respective first and second frequency allocation systems for first and second spreading codes used in each of a plurality of base stations. Therefore, Appellant submits that Ketseoglou does not provide the teachings alleged in the Final Action with respect to Claim 20. Accordingly, Appellant submits that the combination of Ketseoglou and Wantanabe does not disclose or suggest all of the recitations of independent Claim 20 and that, for at least these reasons, independent Claim 20 is patentable. Appellant further submits that independent Claim 36 is patentable for at least similar reasons, and that dependent Claims 21, 30, 31, 37 and 38 are patentable at least by virtue of the patentability of the

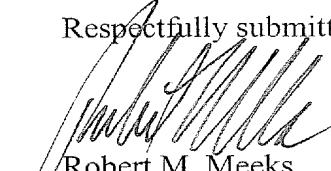
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respective ones of independent Claim 20 and 36 from which they depend. Therefore, Appellant requests reversal of the rejections of Claims 20, 21, 30, 31, 36 and 37.

IV. Conclusion

For at least the reasons discussed above, Appellant requests reversal of the rejections of Claims 20, 21, 30-32, 34-37, and 39-42.

Respectfully submitted,

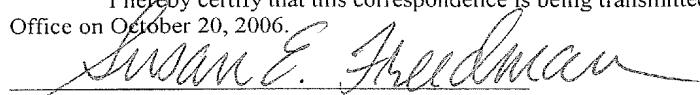


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CERTIFICATION OF ELECTRONIC TRANSMISSION UNDER 37 CFR § 1.8

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Susan E. Freedman
Date of Signature: October 20, 2006

Appendix A: Claims

1.-19. (Cancelled)

20. (Rejected) A method of operating a plurality of code division multiple access cellular radiotelephone base stations, the method comprising the steps of:

communicating between the plurality of base stations and radiotelephones using a common plurality of spreading codes, wherein each base station uses the common plurality of spreading codes; and

allocating cellular radiotelephone frequencies among said plurality of base stations according to a first frequency allocation system for a first one of said spreading codes and according to a second frequency allocation system different from said first frequency allocation system for a second one of said spreading codes.

21. (Rejected) The method according to Claim 20 wherein said step of allocating is preceded by a step of synchronizing said plurality of spreading codes among said plurality of base stations so that said periods of said plurality of spreading codes are concurrent, to produce synchronized spreading codes among said plurality of base stations.

22.-29. (Cancelled)

30. (Rejected) The method according to Claim 20, further comprising the step of synchronizing said common plurality of spreading codes.

31. (Rejected) The method according to Claim 20, wherein the first frequency allocation system comprise a first frequency reuse pattern, and wherein the second frequency allocation system comprises a second frequency reuse pattern.

32. (Rejected) A method of operating a code division multiple access (CDMA) wireless communications system that includes a plurality of cells, the method comprising:

allocating frequencies for use in the plurality of cells such that respective different frequency allocations are provided for respective first and second spreading codes used in

each of the cells, wherein the step of allocating frequencies for use in the plurality of cells comprises:

applying a first frequency reuse pattern for the first spreading code; and
applying a second frequency reuse pattern for the second spreading code.

33. (Canceled)

34. (Rejected) The method according to Claim 32, wherein the step of allocating frequencies for use in the plurality of cells comprises:

adaptively allocating frequencies for use with the first spreading code according to a first adaptive allocation scheme; and
adaptively allocating frequencies for use with the second spreading code according to a second adaptive allocation scheme.

35. (Rejected) The method according to Claim 32 wherein said first and said second spreading codes comprises one of a plurality of direct-sequence-modulation codes, a plurality of frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes.

36. (Rejected) A cellular radiotelephone system comprising:
a plurality of code division multiple access (CDMA) cellular radiotelephone base stations that communicate with cellular radiotelephones on a plurality of frequencies, the base stations each using a common plurality of spreading codes and using the frequencies that are allocated among said plurality of base stations such that frequencies are allocated for a first one of said spreading codes according to a first frequency allocation system and are allocated for a second one of said spreading codes according to a second frequency allocation system different from said first frequency allocation system.

37. (Rejected) The system according to Claim 36 wherein said common plurality of spreading codes is one of a plurality of direct-sequence-modulation codes, a plurality of

frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes.

38. (Objected to) The system according to Claim 36, wherein said first frequency allocation has a number of subscribers, and wherein said plurality of code division multiple access (CDMA) cellular radiotelephone base stations operate responsive to said number of subscribers of said first frequency allocation system such that cellular radiotelephone frequencies are allocated among said plurality of base stations according to said first frequency allocation system for a third one of said synchronized spreading codes.

39. (Rejected) A code division multiple access (CDMA) wireless communications system, comprising:

a plurality of cells; and

a code reuse partitioning circuit operative to allocate frequencies for use in the plurality of cells such that respective different frequency allocations are provided for respective first and second spreading codes used in each of the cells.

40. (Rejected) The system according to Claim 39, wherein the code reuse partitioning circuit is operative to apply a first frequency reuse pattern for a first spreading code and to apply a second frequency reuse pattern for a second spreading code.

41. (Rejected) The system according to Claim 40, wherein the code reuse partitioning circuit is operative to adaptively allocating frequencies for use with the first spreading code according to a first adaptive allocation scheme and to adaptively allocating frequencies for use with the second spreading code according to a second adaptive allocation scheme.

42. (Rejected) The system according to Claim 40, wherein the first spreading code and the second spreading code comprises one of a plurality of direct-sequence-modulation codes, a plurality of frequency-hopping codes, and a plurality of combined frequency-hopping/direct-sequence-modulation codes.

Appendix B: Evidence

No evidence pursuant to 37 C.F.R. Sec. 1.130, Sec. 1.131, or Sec. 1.132 is relied upon by Appellant in this Appeal.

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Appendix C: Related Proceedings

There are no related proceedings pursuant to 37 C.F.R. Sec. 41.37.